IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Pierre Matz et al.	Art Unit	: 1791
Serial No.	: 10/505,456	Examiner	: Jeff H. Aftergut
Filed	: September 2, 2004	Conf. No.	: 1788
Title	: Assembly methodand a plastic composite tube		

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Pursuant to the United States Patent and Trademark Office OG Notices: 12 July 2005 - New Pre-Appeal Brief Conference Pilot Program, a request for a review of a matter identified below on appeal is hereby submitted with the Notice of Appeal. Review of this identified matter by a panel of examiners ("Panel") is requested because the rejection of record is clearly not proper and is without basis in view of legal and factual deficiencies in the rejections. All rights to address additional matters on appeal in any subsequent appeal brief are hereby reserved.

Claim 4, 5, and 12 are currently under examination. Only claim 12 is independent. It covers a method of assembling multilayer tapes. The method includes (1) sequentially winding around an unoriented plastic tubular support two tapes, each of which contains (i) a transparent/oriented layer and (ii) a radiation-absorbing layer (i.e., a layer partially absorbing radiation energy), and (2) applying electromagnetic radiation to the thus-obtained tubular support. In other words, claim 12 requires a unique tape structure, i.e., each tape containing **two** layers -- a transparent layer and a radiation-absorbing layer.

In the final office action dated January, 16, 2008, the Examiner rejected claims 4 and 12 for obviousness, relying on Greig, U.K. Patent Application Publication 2,276,584 (Greig) and Kile et al., U.S. Patent 4,093,004 (Kile); and rejected claims 4 and 5 also for obviousness, relying on Greig and Foglia et al., U.S. Patent 3,560,291 (Foglia).

In response, Applicants pointed out that none of Greig, Kile, and Foglia teaches or suggests winding on a tuble multilayer tapes as required by claim 12, let alone the unique

tape structure recited therein, namely, each tape containing **two** layers, a transparent layer and a radiation-absorbing layer.

In the advisory action dated April 29, 2008, the Examiner raised two issues, each of which is addressed below:

First, the Examiner asserts, for the first time, that the claim language does not clearly define two layers, one being transparent and the other partially absorbing radiation energy. Applicants disagree.

Claims 12 recites:

"each tape comprising:
at least one plastic **layer** oriented in at least one direction that is **transparent** to electromagnetic radiation, and
at least one **layer** that partially **absorbs the energy** transported by electromagnetic **radiation**."

A skilled person in the art, in view of this recitation, would understand, among the two layers recited in this claim, one is a transparent layer and the other is a radiation absorbing layer. The Examiner's assertion is clearly erroneous.

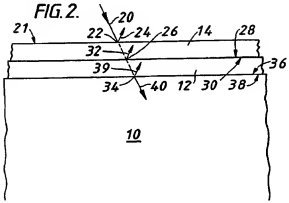
Of note, Applicants did not amend the claims in their response to the final office action. Thus, this recitation had been examined before the final office action. As the Examiner raises a new ground for rejection, he should withdraw the finality of the office action and issue another office action, instead of asserting this new ground in an advisory action, for fairness.

Second, the Examiner asserts that Greig suggests (1) including an absorber in the outmost layer of a tube to avoid overheating the inside of the tube, and (2) including an absorber in the tapes wound on the tube to generate heat during radiation. He proceeds to conclude that, in view of these suggestions, one skilled in the art would have modified Greig's invention by including an absorber (i.e., carbon black) in the outmost area of the tapes (thus resulting in bi-layer tapes, one being transparent and the other being radiation-absorbing) so as to generate heat during radiation and avoid overheating the inside of the tapes.

Greig teaches a unique design of reinforcing a tube. As illustrated in the figure below (reproduced from this reference), tube 10 containing an absorber is covered by two

mono-layer tapes 12 and 14. Radiation beam 20 reaches tube 10 after traveling through tapes 14 and 12, and is absorbed by the absorber in the tube body, thereby generating heat. The heat "causes the interface 36, 38 to rapidly reach the temperature at which the two surfaces 36 [and] 38 become joined by fusion welding." See page 9, lines 5-7. The heat "is also rapidly conducted back through the layer 12 to interface 28, 30[,] which [heat,] when combined with the heat produced by partial absorption of the beam 20[] and [by] reflections 32 [and] 39 in the layers 14 [and] 12, causes the interface 28, 30 to rapidly reach the temperature at which the two surfaces 28, 30 become joined by fusion welding." See page 9, lines 8-13.

FIG. 2.



Although Greig also states that the amount of the absorber used in tapes 12 and 14 can be adjusted to control absorption of the radiation, conducting heat through tape 12 from tube 10 to the interface between tapes 12 and 14 plays an essential role in reinforcing the tube in Greig's design of reinforcing a tube. In other words, the Greig method was designed to operate under a basic principle that requires conducting heat from the tube through the adjacent tape to the other surface of the tape.

By contrast, in the tape-wound tubular support prepared by the method of claim 12, the radiation-absorbing layer in a tape, upon radiation, partially absorbs energy resulting in a rise of its temperature, while the transparent layer in the same tape does not absorb radiation energy and its temperature remains low. When the radiation-absorbing layer in a tape reaches the fusion temperature, it forms fusion bonding with its adjacent surface, causing the tape to adhere to that surface while the temperature of the transparent layer in the same tape remains low. Thus, in the design of the claimed invention, the heat

is generated locally in the radiation-absorbing layer. Conducting heat from the tube through a tape is not neccessary, indeed not preferred, since it increases risk of degradation of the transparent layer in the tape. Thus, the operation principle of the claimed method is very different from that of the Greig method.

Modifying the Greig method to arrive at this invention would have changed the Greig's basic principle. More specifically, by this modification, one would have to rely on locally generating heat in a layer instead of conducting heat from the tube through a tape to another tape.

Applicants would like to bring to the Examiner's attention that "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." See MPEP 2143.01 VI. As discussed above, the modification proposed by the Examiner would change the principle of operation of the Greig method. Applicants submit that, pursuant to this MPEP guideline, Greig does not sufficiently render claim 12 *prima facie* obvious.

Kile and Foglia do not cure this deficiency. Kile teaches applying an oriented polymer layer onto a pipe to enhance reinforcement and Foglia teaches using laser radiation to bond thermoplastic films. Neither Kile nor Foglia mentions using multilayer tapes.

As each of Greig, Kile, and Foglia fails to teach or suggest using multilayer tapes, let alone the unique array of the layers required by claim 12, i.e., each tape containing **two** layers, i.e., a transparent layer and a radiation-absorbing layer, any combination of these three references also fails to do so. In other words, claim 12 is not rendered obvious by Greig, Kile, and Foglia, either taken alone or in combination.

Finally, Applicants would like to point out that even if *prima facie* obviousness has been established (which Applicants do not concede), it could be successfully rebutted as follows:

Greig requires conducting heat from the tube through the adjacent tape. As a result, the temperature of that tape increases. Greig therefore suggests that "the amount of pigment or other absorber used [in the tape] is ideally adjusted" to prevent overheating

or degradation of this tape. See page 11, lines 10-14. Claim 12 requires that each tape contain two layers, a transparent layer and a radiation-absorbing layer. Upon radiation, the radiation-absorbing layer generates heat adequately to cause fusion welding without increasing the temperature of the transparent layer. Thus, overheating or degradation of the transparent layer is prevented without the need to control the transparency of this layer. In other words, the claimed method is advantageous over the Greig method. Since the other two references also fails to teach using multi-layer tapes to avoid overheating, the three references cited by the Examiner, either alone or in combination, do not suggest this advantage.

In view of the above, Applicants submit that a *prima facie* obviousness case, if established, has been successfully rebutted by a showing of the above-described advantage.

In sum, claim 12 is not rendered obvious over the cited references. Neither are claims 4 and 5, which depend from claim 12. A formal notice of allowance is thus respectfully requested.

Please apply any charges to Deposit Account No. 50-4189, referencing Attorney Docket No. 69701-003US1.

Respectfully submitted,

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